AMENDMENTS TO THE CLAIMS

1. (currently amended): A process for the amplification of a nucleic acid template comprising:

providing a primer covalently bound to a non-nucleotide carrier macromolecule;

hybridizing the bound primer to said template; and

extending said primer to form an extended primer which replicates from said template,

wherein said carrier macromolecule is ~~water soluble at a temperature in the range of 0-60°C and is selected from the group consisting of: a polysaccharide, and~~ a dextran ~~or dextran derivative~~; and

performing amplification of the nucleic acid template.

2. (canceled)

3. (currently amended): A process for the amplification of a nucleic acid template comprising:

providing a primer bound to a non-nucleotide carrier macromolecule via one or more moieties derived from divinyl sulfone located on the non-nucleotide carrier macromolecule;

hybridizing the bound primer to said template; and

extending said primer to form an extended primer which replicates from said template;

wherein the non-nucleotide carrier macromolecule is ~~selected from the group consisting of: a polysaccharide and~~ a dextran ~~or dextran derivative~~; and

performing amplification of the nucleic acid template.

4. (previously presented): The process as claimed in claim 3, wherein the carrier macromolecule in its free state is substantially linear and substantially uncharged at a pH in the range of 4 to 10.

5. (previously presented): The process as claimed in claim 4, wherein said non-nucleotide carrier macromolecule has a peak molecular weight in the range of 1,000 to about 40,000,000 Daltons or 80,000 to about 500,000 Daltons.

6. (previously presented): The process as claimed in claim 3, wherein said carrier macromolecule is water soluble and has a molecular weight in excess of 80,000 Daltons.

7. (previously presented): The process as claimed in claim 3, wherein said primer is bound to said carrier macromolecule by a covalent linkage formed between one of the two vinyl groups of the divinyl sulphone and a reactive functionality on the carrier macromolecule, and

by a covalent linkage formed between one of the two vinyl groups of the divinyl sulphone and a reactive functionality on the primer.

8. (previously presented): The process as claimed in claim 3, wherein said primer is extended by a polymerase wherein said polymerase incorporates nucleotides into said primer.

9. (currently amended): The process as ~~clamed~~ claimed in claim 3, wherein said primer is extended in a polymerase chain reaction (pcr), strand displacement amplification (sda), self-sustained sequence replication (ssr) or nucleic acid sequence-based amplification (nasba) amplification procedure.

10. (previously presented): The process as claimed in claim 6, wherein said primer is extended by the action of a ligase sequentially ligating said primer to at least two other primers hybridised to said template.

11. (previously presented): The process as claimed in claim 3, wherein said template is a double stranded template and is denatured to a single stranded form, said carrier macromolecule-bound primer is complementary in sequence to a region of one of the template strands and a second primer is provided which is complementary in sequence to a region of the

other strand, which second primer is also extended so as to form a complementary sequence copy of said template second strand.

12. (previously presented): The process as claimed in claim 3, wherein said carrier macromolecule is bound to a solid support.

13. (previously presented): The process as claimed in claim 8, further comprising using a second primer wherein said second primer is extended in said amplification procedure which is also bound to a carrier macromolecule.

14. (previously presented): The process as claimed in claim 10, wherein said another primer which is ligated by said ligase is also bound to a carrier macromolecule.

15. (previously presented): The process as claimed in claim 14, wherein during the extension, a detectable marker is incorporated into one of the extended primers.

16. (previously presented): The process as claimed in claim 15, wherein said extension of one of the primers is conducted *in situ* in a biological sample.

17. (previously presented): The process as claimed in claim 16, wherein said biological sample is a plant or animal tissue sample, microorganism culture, or microorganism culture medium.

18-19. (canceled)

20. (previously presented): A method of detecting a nucleic acid sequence in a sample, comprising contacting said sample with a probe under hybridization conditions, wherein said probe comprises an extended primer having a sequence complementary to said sequence to be detected and wherein said probe has been made according to the method of claim 17 and further wherein said sequence is said template in the method of claim 17.

21-22. (canceled)

23. (currently amended): A process for the replication of a nucleic acid template comprising:

providing a primer being bonded to a carrier macromolecule ~~selected from the group consisting of: a polysaccharide, and~~ which is a dextran ~~or dextran derivative~~;

hybridizing the bound primer to said template; and

extending said primer to form an extended primer which replicates from said template,

wherein said primer is bound to said carrier macromolecule via one or more moieties derived from divinyl sulphone,

at least one of the moieties is attached to the carrier macromolecule by a covalent linkage formed between one of the two vinyl groups of a divinyl sulphone molecule of the at least one moiety and a reactive functionality on the carrier macromolecule, and

at least one of the moieties is attached to the primer by a covalent linkage formed between one of the two vinyl groups of a divinyl sulphone molecule of the at least one moiety and a reactive functionality on the primer.

24. (canceled)

25. (currently amended): The process of claim ~~24~~ 23, wherein said dextran in its free state is substantially linear and substantially unchanged at a pH in the range of 4 to 10.

26. (currently amended): The process of claim ~~24~~ 23, wherein said dextran has a peak molecular weight in the range of 1,000 to 40,000,000.

27. (canceled)

28. (currently amended): The process of claim ~~24~~ 23, wherein said primer is extended in a polymerase chain reaction (pcr) , strand displacement amplification (sda), self-sustained sequence replication (3sr) or nucleic acid sequence-based amplification (nasba) amplification procedure.

29. (currently amended): The process of claim ~~24~~ 23, wherein said primer is extended by the action of a ligase ligating said primer to at least one further primer hybridized to said template.

30. (currently amended): The process of claim ~~24~~ 23, wherein said template is a double stranded template and is denatured to single stranded form, said dextran-bound primer is complementary in sequence to a region of a first one of the template strands and a second primer is provided which is complementary in sequence to a region of the other strand, which second primer is also extended so as to form a complementary sequence copy of said template second strand.

31. (currently amended): The process of claim ~~24~~ 23, wherein said dextran is bound to a solid support.

32. (currently amended): The process of claim ~~24~~ 23, wherein said extension of the primer is conducted in situ in a biological sample.

33. (previously presented): The process of claim 32, wherein said biological sample is a plant or animal tissue sample, microorganism culture, or microorganism culture medium.

34. (canceled)

35. (previously presented): The process of claim 1 wherein the non-nucleotide carrier macromolecule further comprises a label.

36. (previously presented): The process of claim 35 wherein the label is a fluorescent label.

37. (previously presented): The process of claim 3 wherein the non-nucleotide carrier macromolecule further comprises a label.

38. (previously presented): The process of claim 37 wherein the label is a fluorescent label.